

Applying these identities, we can write

$$\begin{aligned} S_{dj} &= \text{MIN}(\text{RowSelectA}, \text{RowSelectB}) * X_{\text{prod}} \\ &= 1/102 * 80\,000 \\ &= 784 \text{ rows.} \end{aligned}$$

A1
Moreover, note that the above equation is equivalent to choosing a maximum single column current UEC such that the applied equation can be written in an alternative form:

$$\begin{aligned} S_{dj} &= 1/\text{MAX}(\text{CurUecA}, \text{CurUecB}) * X_{\text{prod}} \\ &= 1/102 * 80\,000 \\ &= 784 \text{ rows} \end{aligned}$$

where S_{dj} is the selectivity as defined above.

It has been found that where skew and possible row and UEC reduction can be ignored this estimate provides a much improved estimate of selectivity than one derived assuming complete independence. Where such conditions are met, the estimated selectivity of 784 rows is much improved from the dramatic underestimate for selectivity of 65 rows obtained using the prior art method.

A clean version of the paragraph starting at page 12, line 13, should read as follows:

In order to obtain multi-column histogram information, we apply the following formula to each interval shown above:

$$(\text{XprodT1.A}) * (\text{XprodT2.A}) / \text{MAX}((\text{CurUECT1.A} \text{Current UECT1.A}), (\text{CurUecT2.A})) / (\text{XprodT1.A} + \text{XprodT2.A}).$$

These calculations generate the following joined histogram:

Column T1.A, T2.A

Interval	CurUec	Rows	Value
0	0	0	0
1	1	10,000	25
2	100	200	150

A2
Here we can also calculate row selectivity and UEC selectivity in a similar manner as before:

$$\text{RowselA} = 10,200/80,000 = 0.1275$$

$$\text{UecselA} = 1/102 = 0.0098.$$

Comparing the results, we note that approximately 13 times as many rows as the total UEC selectivity would have been produced (i.e. $\text{RowselA}/\text{UecselA} = 13.005$). It is this type of skew that the join skew formula corrects when applying multi-column UEC information. If we applied the multi-column formula without correcting for skew we would lose all join skew information.